

IN THE CLAIMS:

What is claimed is:

1. A cardiopulmonary bypass filter system comprising:
 - a housing having distal and proximal ends, the proximal end
 - 5 comprising a connector adapted to connect to at least one hose and the distal end comprising a distal member having first and second openings, wherein the housing comprises a first lumen adapted to be in fluid communication with the at least one hose and one of the first and second openings and a second lumen extending from a port to the other of the first and second openings in the housing distal member; and
 - 10 a vascular filter system comprising a collapsible filter advancable through the housing port, said vascular filter system comprising (a) a filter membrane support structure, and (b) a filter membrane attached to said filter membrane support structure, said filter membrane having openings, wherein said openings have variable diameters, and wherein the diameter of said openings range from about 20 to about 300 microns.
2. The filter system of claim 1, wherein the housing is adapted to be connected to a cardiopulmonary bypass machine.
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3. The filter system of claim 1, wherein said housing has a distal flange.
4. The filter system of claim 3, wherein said flange is rigid or flexible.

5. The filter system of claim 1, wherein said two lumens form a substantially V-shape.
6. The filter system of claim 1, wherein said housing distal member is
5 capable of extending into a blood vessel.
7. The filter system of claim 1 wherein said openings are non-uniformly spaced.
- 10 8. The filter system of claim 1 wherein said openings comprise fibers attached to said openings to increase embolic capture.